

LISTING OF CLAIMS:

The following listing of claims replaces all previous versions, and listings of claims in the present application.

1.- 5. (Canceled)

6. (Currently amended) A hologram screen for displaying an image by diffracting and scattering image light projected from an image projection apparatus, comprising:

an upward/downward light scattering device placed on an image projection apparatus side of a hologram device in the hologram screen, and oriented so as to scatter light incident from at least one upward/downward specific angle range spreading obliquely upward or obliquely downward; and

a leftward/rightward light scattering device placed between the hologram device and the upward/downward light scattering device or on the image projection apparatus side of the upward/downward light scattering device, and oriented so as to scatter light incident from a leftward/rightward specific angle range spreading obliquely leftward and obliquely rightward,

wherein the upward/downward specific angle range contains an incidence angle at which the image light is incident on the hologram screen; and

wherein when the leftward/rightward specific angle range is from γ_1 to γ_2 leftward and from δ_1 to δ_2 rightward relative to a normal to the hologram screen, γ_1 , γ_2 , δ_1 , and δ_2 satisfy

$$20^\circ \leq \gamma_1 \leq 25^\circ, \quad 65^\circ \leq \gamma_2 \leq 70^\circ$$

$$20^\circ \leq \delta_1 \leq 25^\circ, \quad 65^\circ \leq \delta_2 \leq 70^\circ.$$

7. (Previously presented) A hologram screen as claimed in claim 6, wherein the upward/downward light scattering device and the leftward/rightward light scattering device

scatter at least 20% of the light incident within the upward/downward specific angle range and the leftward/rightward specific angle range, respectively.

8. (Previously presented) A hologram screen as claimed in claim 6, wherein the upward/downward light scattering device and the leftward/rightward light scattering device are both placed within 5 mm of the hologram device.

9. (Previously presented) A hologram screen as claimed in claim 6, wherein the upward/downward light scattering device and the leftward/rightward light scattering, device are detachable.

10. (Currently amended) A hologram screen as claimed in claim ~~4~~ 6, wherein the hologram screen is constructed by joining together a plurality of hologram devices arranged in two dimensions.

11. (Original) A hologram screen as claimed in claim 10, wherein all the plurality of hologram devices have optically the same characteristics.

12. (Original) A hologram screen as claimed in claim 10, wherein the plurality of hologram devices are recorded using respectively different reference beams and therefore have optically different characteristics.

13. (Currently amended) A hologram screen as claimed in claim ~~4~~ 6, wherein the hologram screen is a transmission-type hologram screen.

14. (Currently amended) A hologram screen as claimed in claim ~~4~~ 6, wherein the hologram screen is a reflection-type hologram screen.

15. (Currently amended) A hologram screen as claimed in claim ~~4~~ 6, wherein the hologram device is produced by recording a diffusing plate.

16. (Currently amended) A hologram screen as claimed in claim ~~4~~ 6, wherein the hologram screen is a computer hologram.

17. - 19. (Canceled)

20. (Currently amended) A hologram screen for displaying an image by diffracting and scattering image light projected from an image projection apparatus, comprising:

an upward/downward light scattering device placed on an image projection apparatus side of a hologram device in the hologram screen, and oriented so as to scatter light incident from at least one upward/downward specific angle range spreading obliquely upward or obliquely downward; and

a leftward/rightward light scattering device placed on an image observer side of the hologram device, and oriented so as to scatter light incident from a leftward/rightward specific angle range spreading obliquely leftward and obliquely rightward, wherein the upward/downward specific angle range contains an incidence angle at which the image light is incident on the hologram device,

wherein when the leftward/rightward specific angle range is from γ_1 to γ_2 leftward and from δ_1 to δ_2 rightward relative to a normal to the hologram screen, γ_1 , γ_2 , δ_1 , and δ_2 satisfy

$$20^\circ \leq \gamma_1 \leq 25^\circ, \quad 65^\circ \leq \gamma_2 \leq 70^\circ$$

$$20^\circ \leq \delta_1 \leq 25^\circ, \quad 65^\circ \leq \delta_2 \leq 70^\circ.$$

21. (Previously presented) A hologram screen as claimed in claim 20, wherein the upward/downward light scattering device and the leftward/rightward light scattering device scatter at least 20% of the light incident within the upward/downward specific angle range and the leftward/rightward specific angle range, respectively.

22. (Previously presented) A hologram screen as claimed in claim 20, wherein the upward/downward light scattering device and the leftward/rightward light scattering device are both placed within 5 mm of the hologram device.

23. (Previously presented) A hologram screen as claimed in claim 20, wherein the upward/downward light scattering device and the leftward/rightward light scattering device are detachable.

24. (Currently amended) A hologram screen as claimed in claim ~~18~~ 20, wherein the hologram screen is constructed by joining together a plurality of hologram devices arranged in two dimensions.

25. (Original) A hologram screen as claimed in claim 24, wherein all the plurality of hologram devices have optically the same characteristics.

26. (Original) A hologram screen as claimed in claim 24, wherein the plurality of hologram devices are recorded using respectively different reference beams and therefore have optically different characteristics.

27. (Currently amended) A hologram screen as claimed in claim ~~18~~ 20, wherein the hologram screen is a transmission-type hologram screen.

28. (Currently amended) A hologram screen as claimed in claim ~~18~~ 20, wherein the hologram screen is a reflection-type hologram screen.

29. (Currently amended) A hologram screen as claimed in claim ~~18~~ 20, wherein the hologram device is produced by recording a diffusing plate.

30. (Currently amended) A hologram screen as claimed in claim 18 20, wherein the hologram screen is a computer hologram.

31. (Currently amended) A hologram display comprising:

a hologram screen for displaying an image by diffracting and scattering image light; and

a projection apparatus for projecting the image light onto the hologram screen, wherein

the hologram screen comprises:

an upward/downward light scattering device placed on an image projection apparatus side of a hologram device in the hologram screen, and oriented so as to scatter light incident from at least one upward/downward specific angle range spreading obliquely upward or obliquely downward; and

a leftward/rightward light scattering device placed on an image observer side of the hologram device, and oriented so as to scatter light incident from a leftward/rightward specific angle range spreading obliquely leftward and obliquely rightward, wherein:

the upward/downward specific angle range contains an incidence angle at which the image light is incident on the hologram device, and

the when the leftward/rightward specific angle range is from γ_1 to γ_2 leftward and from δ_1 to δ_2 rightward relative to a normal to the hologram screen, γ_1 , γ_2 , δ_1 , and δ_2 satisfy

$$20^\circ \leq \gamma_1 \leq 25^\circ, \quad 65^\circ \leq \gamma_2 \leq 70^\circ$$

$$20^\circ \leq \delta_1 \leq 25^\circ, \quad 65^\circ \leq \delta_2 \leq 70^\circ.$$